

Remarks/Arguments:

Claims 1-3, 8-13, 27-29 and 34-39 are pending.

Claims 1-3, 8-9, 27-29 and 34-35 have been rejected by the Examiner under 35 U.S.C. 103(a) as being unpatentable over Andrieu et al. in view of Holland et al., and Andrews et al. Claims 10-12 and 36-38 are further rejected under 35 U.S.C. 103(a) as being unpatentable over Andrieu et al. in view of Holland et al. and Andrews et al. and further in view of Kite III et al. Claims 13 and 39 are further rejected under 35 U.S.C. 103(a) as being unpatentable under Andrieu et al. in view of Holland et al. in view of Andrews et al., and further in view of Holt et al.

Independent Claims 1 and 27, the only independent claims in the case, have been amended to recite that the protective cover not only protects the lengths of material thereunder, but the fabric yarns themselves are resistant to deterioration from chemicals, fuels, and the like, as well as being highly resistant to abrasion, and the fabric of the sleeve is resistant to heat build up as a result of relative movement between the sleeve and the length of material. In addition, the recitation "single layer" in line 6 of Claim 1 and line 8 of Claim 27 has been deleted, as it is believed to be unnecessarily limiting. Finally, the term "film bonded to at least the outer surface thereof" has been deleted from line 12 of Claim 1 and line 15 of Claim 27, as being redundant to language in lines 6, 7 of Claim 1 and line 9 of Claim 27.

By way of overview, applicant agrees with the Examiner that the factual inquiry set forth in *Graham v. John Deere* are the appropriate inquiries for determining obviousness and are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.

4. Considering objective evidence present in the application indicating obviousness or non-obviousness.

Still by way of overview, applicant takes the position that the Examiner has erred both in determining the scope and contents of the prior art, particularly the Andrieu et al. reference, has erred in determining the level of ordinary skill in the pertinent art, and has erred in using hindsight only in combining the references. All the while Examiner has ignored the fact that the Andrieu reference actually teaches away from such a combination, and the combination of Holland with Andrieu would destroy the intent of Andrieu's invention.

**Applicant Discovered the Source of a Problem Protecting
Cables and Hoses in Harsh Environments**

Applicant was the first to identify a source of the problem causing certain covers used in harsh environments to wear out. That problem source was that material from which previous covers had been made was not effective for their purpose. In certain industries, such as airline, shipping, and construction, large cables (such as mooring lines), fuel hoses and electrical cables, must be pulled and dragged repeatedly (several times a day) across abrasive surfaces such as concrete and asphalt. These cables (often 100 or 200 feet in length) are extremely expensive (\$15/foot and up to, sometimes, \$100/foot). In addition, these surfaces may be wet, have gasoline, or even stronger chemicals thereon. As a result of this harsh environment and surface conditions, such cables or hoses must be replaced frequently, which is a very expensive undertaking. While covers made of canvas, leather, and nylon have been known and used, such materials have worn out immediately and not been satisfactory, and therefore they have not been of much use. The inventors of the present application determined the reason was because such covers were very heavy and hard to maneuver about. Secondly, they quickly deteriorated, not

only because they did not resist abrasion, but also because they were not themselves resistant to moisture from water, gasoline, chemicals, and were not resistant to UV. It should be kept in mind the characteristics described above are of the covers themselves, not the underlying cables and hoses. Also, when the covers were loosely attached in such a manner as to let cables move therewithin, considerable heat was generated from the friction, which accelerated the deterioration of the cover.

The weight of the fabric covers should not be lightly dismissed. When used with large cables of great length, the covers can add substantially to the weight.

The inventor's solution was to utilize a cover formed from an entirely different type of yarn. The resulting material was much more expensive, however, they are about one-third the weight, and the life expectancy of the covers made from such material turned out to be so long, that it became economically feasible. Further, the use of the EVA film bonded to the surface of the fabric reduces the friction between the cover and the cable or hose thereunder, which friction also tended to deteriorate the cover more quickly.

The Prior Art Is Quite Different

The Andrieu et al. reference does disclose a protective cover or sleeve for wires and cables, however Andrieu et al. is not concerned with the life of the cover itself, nor the weight thereof. Rather, Andrieu et al. is directed to a cover that has a better closure means so that the same cover can fit snugly around various diameters of cables, hoses, wire bundles, or the like. As such, it is very important in Andrieu et al. that the yarns which form the surface of the cover be bulky, so as to better receive and hold the hooks of the Velcro-type closure elements secured along the opposite edge of the cover.

The Examiner has erred in reading the Andrieu et al. cover as being formed of all polyester. It is not. Only the warp yarns 11, which are monofilament warp yarns having a diameter of 8-15 mils, are polyester. Thus they are stiff and rod-like, and could not be used as the fill yarn. The actual fill yarns 13 are multi-filament yarns, probably textured to achieve the bulk that is desired, and are not designated as made of any particular material. The purpose of the Andrieu et al. cover is to protect the relatively stationary wires and cables from the environment in which they exist. As stated in column 1, lines 16-20, the sleeves are intended to provide protection for the cables from the effects of abrasion or heat as well as to maintain the cables in a neatly bundled arrangement so they are not damaged by moving machinery parts or the like. Further, in column 5, lines 27-33, the statement is made that such closure means (hooks engaging bulky yarn) resists separation of the wires under conditions of stress and vibration, making them suitable for automotive application as well as applications in other forms of moving machinery where it is necessary to bundle cables or other elongated flexible articles. Nowhere in the Andrieu et al. reference is there either a mention that the protective sleeves are utilized or are intended to be utilized around cables or hoses being dragged across surfaces in such environments as airports, docks and construction sites. Further, nowhere in the Andrieu et al. reference is there even any mention that the material of the sleeves is itself important, *i.e.*, that the protective sleeves themselves need to be light weight and resistant to abrasion and deterioration from chemicals and fuels. Such is simply foreign to the Andrieu et al. reference, since Andrieu's covers are relatively stationary and not designed to be moved across abrasive surfaces.

The Holland et al. patent is directed to flexible cargo curtains for covering the end openings of cargo containers, luggage trailers, and truck openings. They take the place of rigid doors. The cargo curtains are formed of ultra-high molecular weight polyethylene, however, there is no recognition or suggestion that they would provide a superior cable or hose cover which would hold up even when dragged repeatedly and continuously across an abrasive surface.

The Andrews et al. reference is directed to an extremely heavy fabric that includes at least an outer and inner primary layer 13 of cut resistant yarns and an outer primary layer 11 of yarns that are themselves formed of an abrasive material. Note, there is no teaching in the Andrews et al. reference that the fabric be resistant to abrasion. In fact it is not. Rather it provides an abrasive layer 11 to dull sharp objects. It is intended to be cut resistant and it is primarily described as being used in fabrics to manufacture articles such as gloves, aprons, arm guards, leg covers, and other protective apparel for employees working in dangerous areas.

Differences Between the Prior Art and the Claims

As stated above, the primary difference between the prior art and the claimed invention is that the Andrieu et al. sleeve is not formed of a material that is itself resistant to abrasion, chemicals, moisture and the like. In fact, it has a surface that is very bulky (formed primarily of multi-filament textured yarns) and would be conducive to snagging, cutting, and abrading. In addition, the Andrieu et al. reference does not provide a sleeve that is formed primarily of yarns of long chain polyethylene fibers having a tinsel modulus equal to or greater than 150 grams/tensure and a tenacity equal to or greater than 20 grams/tensure.

Again, the Andrieu et al. sleeve is designed to provide protection to the underlying wires simply because it is a cover, not because it is itself resistant to abrasion, chemicals, and the like. This is a very distinct difference.

Who Is the Person of Ordinary Skill in the Art in This Instance?

As far as the present invention is concerned, the person of ordinary skill in the art would be a designer of cables, hoses, ropes, and attachments for such items. He would be experienced in fabricating textile specialty products and have a general working knowledge of the characteristics of various types of yarns and fabrics made therefrom. He may have a textile degree or he may have had years of experience on the job working with textile materials, but the person of ordinary skill in the art in this area would not have specific knowledge concerning the more subtle chemical aspects of various fibers or films, including melting point, tenacity, and tensile modulus. He would be aware that fabrics formed of high performance yarns like ultra-high molecular weight polyethylene exist and are very expensive and probably cost 4-6 times as much as fabrics formed from nylon, polyester, and other more conventional fabrics. He would not be aware of the degree of superiority they would have over conventional fabrics of canvas, nylon or even polyester.

The Combination of Andrieu With the Other Secondary References has been Made as a Result of Hindsight, Not as a Result of a Predictable Combination.

There are three reasons why the Examiners' rejection of Claims 1 and 27 are in error. First, Andrieu et al. teaches away from using yarns such as the yarns used to form the fabric in the Holland et al. cargo curtain. Andrieu et al. very specifically, and on various instances throughout its specification, refers to the bulky, multifilament fill yarns 13. See, for example, Column 1, lines 60-63, Column 2, lines 1-2, Column 3, line 60, Column 4, line 2 and Column 5, lines 3-13. These fill yarns are not described as being polyester, but are described only as being bulky, so that the hooks of the Velcro fastening material along the opposite edge will catch and hold when the sleeve is assembled onto the cable or wires. The only polyester yarns in the fabric are the monofilament rod-like warp yarns 10. They do not form substantially the fabric of the

sleeve. In fact, they do not appear on the face of the fabric at all, and could not help the fabric resist abrasion. By the same token, the yarns of the Holland fabric are spun yarns from extremely high performance fibers (UHMWPS) which form the cut resistant fabric of the cargo curtain. Because of their makeup, they could not form the bulky surface required by Andrieu et al. For this reason the Andrieu et al. reference teaches away from the Holland type yarns.

Secondly, relating to the argument above, if the Holland type yarns were used in place of the bulky multifilament yarns of Andrieu et al., such substitution would tend to destroy the intent of the Andrieu, et al. teaching. For this reason also then, to use the teaching of Holland with Andrieu et al. would be improper.

Finally, even if the combination of Holland et al. with Andrieu et al. could be made, which applicant urges it cannot, the outcome would not have been predictable to a person of ordinary skill in the art. The textile industry is a very cost-conscious industry, and fabric design is made with costs in mind. In the first place, there is nothing about the Andrieu et al. reference that would suggest to the POSITA that the material of the Andrieu et al. sleeve should be changed to provide a better protective cover for cables and hoses being dragged around in airports, docks, and construction sites. Stated differently, there is nothing in either the Andrieu et al. reference or the Holland reference that would suggest to a person of ordinary skill in the art that the source of the problem in protective covers for airports, docks, and construction sites is the material or that a change in material would substantially enhance the product. Secondly, as recited in the specification some of these cables to be protected cost \$15/ft. and more. From the inventor's declaration of May 30, 2006, it is known that previously used protective covers sold anywhere from \$1-\$5.50/ft. while covers formed from the claimed material run from \$15-\$25/ft. It would not be predictable to a person of ordinary skill in the art that the idea of making a fabric

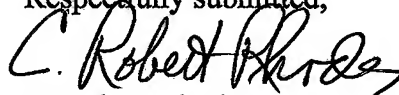
that costs 3-25 times as much as the Andrieu et al. type fabric would predictably result in product that could be economically sold. In other words, the person of ordinary skill in the art would not predict that a product costing 3-25 times as much as conventional fabrics would result in a commercially acceptable product, because he would not recognize that the life expectancy of such a product would exceed the cost investment. This is unpredictability. The only reason to substitute the fabric of Holland et al. for the fabric of Andrieu et al. would be hindsight as a result of the teaching of the instant application.

The other dependant claims 2, 3, 8-13, 28, 29, and 34-39 include all of the limitations of independent Claims 1 and 27 and will not be argued separately. However, it is urged that the rejection of the other claims is erroneous for the same reasons as applied to the independent Claims 1 and 27 above.

CONCLUSION

As a result of the amendments and arguments set forth hereinabove, our applicant urges that the Examiner should withdraw his rejection of Claims 1-3, 8-13, 27-29 and 34-39 and pass such claims to issue. Such action is according and requested.

Respectfully submitted,



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